



## CHAPTER 4 RECREATIONAL USE OF WILDERNESS

One of the goals of the Wilderness Management Plan is to guide management of wilderness resources while providing recreational opportunities for a broad range of visitor experiences and settings. Within the context of the wilderness mandate, Grand Canyon National Park offers the opportunity for a variety of recreational activities and uses in popular destinations as well as remote areas.

### *4.1 Issues and Public Concerns*

Comments related to wilderness recreational use were received during the Public Scoping Process in 1995. In particular, people were asked to comment on day use in the Cross-Canyon Corridor, private stock use, impacts to natural and cultural resources from users, and conflicts between different use groups.

While many respondents indicated a preference for hiking in wilderness areas, many mentioned that they often access wilderness trails through the Cross-Canyon Corridor. Those who provided information on their day-hiking experience said they often avoid the Corridor trails due to crowding and stock use. It appears that most user conflicts are related to high use levels of these trails, and on occasion, at popular river beaches and attraction sites where hikers encounter large river parties.

Many respondents commented on the Park's efforts to preserve natural conditions and protect cultural resources in wilderness areas. Some suggested that use levels be decreased in popular camp areas such as Hermit Creek and Horseshoe Mesa in order to decrease the impacts from visitor use. Many suggested that the best way to address problems related to visitor use is through public education.

### *4.2 The Regional Recreation Opportunity Spectrum*

The recreational activities offered within Grand Canyon National Park are compatible with the Park's significance and its wilderness resources. Opportunities for other activities such as motorboating, hunting, mountain biking, and snowmobiling are available on neighboring public and Tribal lands. Specific information on use of public and Tribal lands adjacent to the Park is found elsewhere in this Plan (See Chapter Five, Backcountry Permit System, and Appendix E, Recreational Opportunities and Permit Information for Adjacent Lands).

### *4.3 Accessibility*

In compliance with the Americans with Disabilities Act of 1990, the NPS will allow, as appropriate, the use of wheelchairs in Grand Canyon wilderness areas. Visitors with sight or other impairments requiring the use of guide animals in the backcountry and wilderness areas, should make specific inquiries at the

Backcountry Office. All visitors must be aware of the unique, and challenging characteristics of the Grand Canyon wilderness, including steep terrain, potential interactions with wildlife, mules and horses, and diverse weather patterns (See Appendix F, Wilderness Use by Persons with Disabilities).

#### 4.4 Day Use

National trends indicate increasing day use of wilderness areas. The actual amount of day-use hiking on trails at Grand Canyon National Park is unknown. High concentrations of day use occur on the corridor trails, where hikers may also encounter several mule strings. Day hiking is also common on North Rim wilderness rim trails, and is increasing on inner canyon trails accessible from the South Rim road system, especially the Hermit and Grandview Trails. The proposed transportation system (General Management Plan 1995) will also have an effect on the dispersal of day hikers.

A day-use research project at Grand Canyon National Park began in June, 1997. The purpose of the study is to learn more about day-use of the wilderness and nonwilderness backcountry areas. Information from this study may be incorporated into future visitor-use plans, and will provide a basis for informed decision-making about issuing permits for guided day hikes, visitor education, and safety programs.

Presently, noncommercial day-use hiking is unrestricted. However, for the health and safety of Park visitors, temporary restrictions on inner canyon trails can be imposed as a result of extreme environmental conditions. These restrictions have resulted from floods, rockfalls, and for periods of extremely high temperatures. Overnight users and guided trips are also subject to these restrictions.

#### 4.5 Overnight Use

All overnight use of the wilderness and backcountry areas of Grand Canyon National Park requires a backcountry use permit. Demand for overnight use of popular Grand Canyon wilderness areas far exceeds availability. The maximum group size for overnight use of the wilderness (and Corridor) is 11 people. The National Park Service strives to maintain a fair and equitable permit system to balance the demands of visitor use with mandates for protection and preservation. Chapter Five discusses the permit system; the Backcountry Reservation and Permit System is included as Appendix G.

#### 4.6 Private Stock Use

Private stock use (equine only) in the wilderness is permitted on existing primitive roads and trails on the North and South Rims (See Appendix H, Wilderness Stock Use Guidelines). A permit is required for overnight use.

*President  
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preserving  
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it is a  
moral  
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The parks and  
forests and  
wilderness  
preserves  
can never be  
replicated....  
Our  
responsibility  
to this land is  
one of the  
most profound  
and  
sacred  
we have.*

*Vice President  
Al Gore  
September 2,  
1997*

This Plan establishes the overnight group-size limit for wilderness areas as a maximum of six people and a maximum of six stock animals (with a limit of five stock to one mounted packer). The total numbers in wilderness for day use will not exceed 12 people and 12 stock animals.

#### ***4.7 Fishing***

Recreational fishing is permitted in Grand Canyon's wilderness areas. All fishing activities must meet Arizona Game and Fish Department regulations, and any special regulations established by the National Park Service. Fishing in the Colorado River is prohibited within one-half mile of the confluence with the Little Colorado River, and in that portion of the Little Colorado River in the Park.

#### ***4.8 Rock Climbing***

Presently, there is no permit required for technical rock climbing. Many technical climbing areas are remote, and only accessible by overnight hiking that requires a Backcountry Use Permit. Most of the rock formations at Grand Canyon are extremely unstable, resulting in hazardous climbing conditions. Climbers are required to employ minimum-impact climbing techniques. The use of power tools to install bolts or other hardware is prohibited. All hardware must be removed upon finishing the route.

#### ***4.9 Nordic Skiing and Snowshoeing***

Nordic skiing and snowshoeing in the Park is unregulated. These activities occur primarily on the rims, often on unmarked trails or roads. Due to the Park's remote areas and hazardous winter conditions, winter travelers must be prepared for storms and delays. Skiers or snowshoers camping overnight in the Park must have a backcountry permit. Any delay or change in itinerary due to conditions should be reported as soon as possible to the first available ranger so that the permit can be adjusted.

Once Highway 67 and the North Entrance Road close for the winter, all overnight travel on the North Rim requires a backcountry permit. Snow machines are prohibited in the Park (except for administrative use). Backcountry users may camp at-large north of the intersection of the North Entrance Road and Fuller Canyon Road. South of this point, and continuing along the entrance road to the North Rim Lodge developed area, campers must use the winter campground facility at the group sites behind the closed Camper Store. At-large camping must be out of view of the North Entrance Road. All trash must be carried out, and human waste cannot be buried over roads, parking lots, trails, near buildings or other areas that will be in view of summer users.

Commercial ski trips must comply with regulations identified in an Incidental (IBP) Business Permit or a Special Use Permit (SUP).

#### *4.10 Bicycling*

Bicycling is allowed on all Park roads accessible and open to private vehicles. In addition, the Arizona Trail on both rims is open to mountain biking, and bicycling opportunities are available on adjacent Forest Service lands. All bicycles are prohibited in wilderness areas. Commercially guided bicycle tours must comply with regulations identified in an IBP or SUP. (See Appendix I, Commercial Use Policy.)

#### *4.11 Commercial Use of Wilderness*

Commercially guided overnight and day trips are considered an appropriate use of the Grand Canyon wilderness, and must comply with the regulations identified in an Incidental Business Permit. The Commercial Use Policy for wilderness and backcountry areas is included as Appendix I. Commercially guided day-hiking trips are currently permitted in Grand Canyon National Park pursuant to an IBP or SUP.

#### *4.12 Cave Entry*

Cave entry and management is guided by the Grand Canyon National Park Draft Cave and Karst Management Plan (1997c). All caving activity (day use or overnight), except for access to Class I caves, must be approved in advance through the Grand Canyon National Park Science Center. A permit will be issued to applicants under the provisions defined in the Cave and Karst Management Plan. A Backcountry Use Permit is

required for overnight stays. Special campsites may be designated on the Cave Entry Permit as provided in the Cave and Karst Management Plan. Cave Entry permits are not automatically issued.

Approvals for cave entry depend on the cave's classification and whether or not it has been classified using the criteria put forth in the Cave and Karst Management Plan, the experience of the person requesting the approval, and the availability of a backcountry permit. A Cave Entry Permit application is included as Appendix J.

#### *4.13 Semi-Primitive Mechanized Access in Nonwilderness Corridors*

Nonwilderness road corridors adjacent to the wilderness areas on the North and South Rims provide access to various rim overlooks and designated camping sites. The primitive roads which are open to motor vehicles and bicycles are subject to temporary closures based on fire conditions, weather, and potential hazards. High-clearance vehicles are recommended. Sections of the Arizona Trail on the Kaibab Plateau within the Park allow bicycle use. Mechanized access in nonwilderness corridors is further addressed in Chapter 8.

#### ***4.14 Area Limitations and Closures***

The fragility of Grand Canyon's lands and resources necessitates use limits in some cases, and, in other cases, temporary or permanent closures (U.S. Department of the Interior, National Park Service 1993c). These limits and closures are authorized by 35 Code of Federal Regulations (CFR) section 1.5:

*1. Camping is not permitted in the Transept, Manzanita, Uncle Jim Point, Long Jim, and Tusayan Use Areas. These are day use areas only. The basis for the closures is that each is adjacent to the Cross-Canyon Corridor Use Area or the rim camping areas, each has a limited physical carrying capacity, and each has special ecological sensitivities.*

*2. Also closed to camping but open to day use are the following:*

- Dripping Spring
- Page Spring
- Portions of Phantom Creek (below 3600-foot contour)
- Thunder River drainage (from its origin to its confluence with Tapeats Creek)
- Havasu Creek within the Park (from the confluence at the Colorado River to Beaver Falls)
- Matkatamiba Canyon below the Redwall Limestone (i.e., below the major side canyon on the east)

- Grandview Mining District (designated camping is located just outside the historic district boundary)
- Deer Creek (north side of the Colorado River within ¼ mile upstream or downstream at confluence, and to the upper end of the narrows)
- Elves Chasm (within ¼ mile of Royal Arch Creek's confluence with the Colorado River, or within the chasm)
- The area on the east side of the Colorado River (within one-half mile of the confluence of the Little Colorado and Colorado Rivers)
- Redwall Cavern

*3. The following are closed to all visitor use*

- Hance Mine (in Asbestos Canyon south of Hance Rapid)
- Bass Mine (in Hakatai Canyon and the area immediately surrounding the mine tailings and waste rock areas)
- Furnace Flats from mile 71.0 to mile 71.3 on the north side of the Colorado River
- Anasazi Bridge

*4. The Hopi Salt Mines along the Colorado River within the Park are closed to all visitation except by permission from the superintendent. The closure extends from river mile 62 to river mile 62.5 on the southeast side of the Colorado River. If permission is obtained, a backcountry permit is also required.*



*5. Havasupai Use Lands are closed to all visitation except to access areas authorized on a Havasupai Tribe or Grand Canyon backcountry permit (includes the Olo and Fossil Use Areas).*

#### **4.15 Applicable Regulations**

The National Park Service advocates Leave No Trace camping principles (See Chapter 10, Interpretation, Education, and Information). The following regulations have been established to support these principles, to promote protection of the Canyon's fragile environment, and provide an equitable system for permitting use.

It is the responsibility of all trip participants to know and obey the following regulations while in the wilderness and backcountry areas of Grand Canyon National Park. These regulations are considered the terms and conditions of a backcountry permit under 36 CFR 1.6:

*1. A Backcountry Use Permit is required for all overnight use, and must be in possession while in the wilderness. Overnight users must have a Backcountry Use Permit displayed on the outside of their pack, tent, or other camping equipment once camp has been established (36 CFR 1.6).*

*2. Wood or charcoal fires are prohibited. However, the use of "Sterno" or backpack stove is permitted (36 CFR 2.13).*

*3. Trash must be packed (carried) out. Burning or burying of trash or toilet paper is prohibited (36 CFR 2.14).*

*4. Possession of firearms, and/or bows and arrows is prohibited (36 CFR 2.4).*

*5. Pets are not allowed in Grand Canyon National Park wilderness areas or within the inner canyon. In rim developed areas, pets can be taken on trails, roads, and other outdoor areas as long as they are under physical restraint, and there are no posted closures. Where pets are allowed, they must be under physical restraint at all times.*

*Exception: Use of guide animals is allowed; specific information can be obtained from the Backcountry Office. (See Appendix F, Wilderness Use by Persons with Disabilities).*

*6. Leaving a trail or walkway to shortcut between portions of the same trail or walkway, or to shortcut to an adjacent trail or walkway, is prohibited (36 CFR 2.1).*

*7. Throwing or rolling rocks or other items inside caves or caverns, into valleys, or canyons, down hillsides or mountainsides, is prohibited (36 CFR 2.1).*

8. Feeding, touching, teasing, frightening, or intentionally disturbing wildlife is prohibited (36 CFR 2.2). Unattended food must be stored properly to prevent access by wildlife. Improper food storage is prohibited (consult the Backcountry Office for information on proper food storage).

9. Possessing, destroying, injuring, defacing, removing, digging, or disturbing from its natural state any plants, rocks, animals, or mineral, cultural, or archeological resources is prohibited. Walking on, entering, traversing or climbing an archeological resource is prohibited (36 CFR 2.1).

10. The use of motorized or wheeled vehicles, such as motorcycles, bicycles, baby buggies/strollers, and similar vehicles, on trails below the rim is prohibited (36 CFR 4.10 and 4.30).

*Exception: The use of wheelchairs for mobility-impaired persons is allowed (See Appendix F, Wilderness Use by People with Disabilities).*

11. Writing, scratching, or otherwise defacing signs, buildings, or other property is prohibited (36 CFR 2.31).

12. More than one party/group from the same organization camping in the same designated campground or noncorridor use area per night is prohibited. Violating a closure, designation, use, or activity restriction or condition, schedule of visiting hours, or use limit is prohibited (36 CFR 1.5 and 1.6).

13. Use of soap in any side stream or within 100 yards of any side stream junction with the Colorado River is prohibited (36 CFR 2.10).

*Exception: Use of soap is allowed in the mainstream of the Colorado River only.*

14. Commercial use of the backcountry must be authorized by a permit from Grand Canyon National Park (See Appendix I, Commercial Use Policy).

15. All trails within the Grand Canyon are closed to use for competitive travel, including "rim-to-rim" and other races or timed events.

16. Disposing of human waste within 100 feet of a water source, high-water mark of a body of water, or a campsite, or within sight of a trail is prohibited (36 CFR 2.14a9). However, hikers camped along the Colorado River must urinate directly into the Colorado River. Fecal waste must still be disposed beyond 100 feet as described above. This exception for urine applies to the Colorado River only, and does not include any sidestream or other water course.



*This is consistent with the Colorado River trip regulations.*

*17. Violating a term or condition of a backcountry permit is prohibited. This includes all aspects of the permit process as outlined in the Wilderness Management Plan (36 CFR 1.6g2).*

#### *4.16 Summary of Changes and Actions*

- Provide information on recreational opportunities outside the Park (See Appendix E, Recreational Opportunities and Permit Information for Adjacent Lands).
- Support day hiking research project. Incorporate findings into future visitor use plans.
- Implement group-size limits for stock overnight and day use in wilderness areas.



## CHAPTER 5

### BACKCOUNTRY PERMIT SYSTEM

One of the management objectives of the Wilderness Management Plan as stated in Chapter One, specifies desired outcomes for the permitting system and operations:

- *serve the visitor by providing users the opportunity to obtain permits for wilderness and nonwilderness backcountry areas that offer the type of experience they seek*
- *serve Park management by providing an effective way to educate the public on low-impact practices, ethics, and safety*
- *provide information on use levels and patterns that enable management to make informed decisions regarding the protection of wilderness values and resources.*

This chapter discusses issues, initiatives, and strategies to achieve the management objectives. (See Appendix G, Backcountry Reservation and Permit System).

#### **5.1 Issues and Public Concerns**

During the Public Scoping Process for the Wilderness Management Plan conducted in 1995, people were asked to comment on issues related to the Park's backcountry permitting operations, including a proposed cost-recovery program.

A high percentage of respondents seemed to favor a cost-recovery system, and stated that the revenues collected should be used to support backcountry-related programs and operations. These operations and services include direct contact with knowledgeable staff by phone or in person, extended office hours, more rangers in the field, trail maintenance, education, and resource management programs.

While many commented that the current system is satisfactory, a majority of comments suggested that certain aspects of the permit system should be improved. Of greatest concern was the inability of users to obtain information from the Backcountry Office. The telephone system did not provide an adequate level of service. Of those who indicated they were "experienced" Grand Canyon hikers, the mail-out system was the preferred way of obtaining permits.

Of those who did not favor a cost-recovery system for backcountry permits, many believed that current Park entrance fees should cover this service. Others felt that the system should be simplified to avoid charging for permits, and many felt strongly that access to public lands should be free.

Neighboring Tribal governments raised issues about access. While permits are required for recreational use on the Navajo, Havasupai, and Hualapai Tribal lands, visitors accessing the Park through Tribal lands often do not obtain the required permits from the Tribes. Visitors mentioned that getting tribal permits can be difficult and confusing.

## 5.2 System and Administration

To meet the tremendous demand for Backcountry Use Permits in a fair and timely manner, an automated backcountry reservation and permit system was established in 1983. A Backcountry Use Permit is required for all overnight wilderness and backcountry use, including overnight hiking, overnight cross-country ski trips, off-river overnight hikes by river-trip members, Colorado River beach camping by backpackers, overnight equine backcountry use, and all overnight backcountry caving activity. (A Cave Entry Permit is required to enter caves. See Appendix J, Cave Entry Permit). The Backcountry Use Permit is valid only for the trip leader, itinerary, and dates specified on the permit. Overnight stays in the dormitories or cabins at Phantom Ranch do not require backcountry permits.

The permit system is designed to regulate, facilitate, distribute, and measure use in wilderness and backcountry areas. Use regulation is essential for protecting Park resources and insuring a variety of backcountry experiences. The permit system also provides information about the extent and intensity of wilderness use, including identification of problem areas. Use statistics generated from the automated system are compared to resource conditions evaluated through the campsite monitoring program (See Chapter 12, Monitoring and Research). This provides a basis for determining actions to prevent further resource impacts from recreational use. Park ranger patrols monitor

use at a level that encourages compliance with the permit system. Wilderness use statistics will be distributed by the Backcountry Office quarterly to the Wilderness Subdistrict, Trail Crew, Interpretation Staff, and the Science Center to facilitate wilderness management.

The permit system is administered by the Backcountry Office. The main office (South Rim), is open year-round. The North Rim office is open from May to October. These offices handle permit applications by mail, FAX, or in person. Permits may also be obtained in-person at a number of remote locations. Specific guidelines and procedures for obtaining a backcountry permit are included as Appendix G, Backcountry Reservation and Permit System.

## 5.3 Recreation Fee Demonstration Program

In 1996, Congress mandated the Secretary of the Interior to implement a three-year Recreation Fee Demonstration Program in up to 100 National Park Service areas. Grand Canyon National Park is participating in the Recreation Fee Demonstration Program, implementing an increased entrance fee and a backcountry permit and impact fee. This program directs parks to increase current fees and establish new fees for recreational uses, and retains a large portion of the resulting revenues at the collecting park for new services and facilities. The program mandates collection of fees for three years, and allows for expendi-

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*Adolph Murie*

tures from fees for up to six years. After this three year period, the Park may continue collection of use fees under a cost recovery program. Currently, all fees are collected under the Fee Demonstration Program. A cost recovery program would allow fees to be collected to cover actual costs, and would have to be approved by Congress.

In general, the benefits realized at Grand Canyon include additional service to the public, increased protection of Park resources, and construction of needed facilities according to the Park's General Management Plan.

The direct benefits of the Recreation Fee Demonstration Program to wilderness users include improved access to the Backcountry Office by FAX or phone, longer office hours, and additional staff to disseminate information and process permits. In 1997, and educational hiking video was written and produced by the Grand Canyon Association in cooperation with the Park. Fees collected through the demonstration program will support additional copies and distribution of the video to permittees and visitor contact stations. In addition, impact fees will support wilderness resource monitoring programs, trail maintenance, and visitor education. Several projects have been identified and are included in Chapter Sixteen, Implementation Schedule.

#### *5.4 Access Through Adjacent Lands*

Access to wilderness in Grand Canyon National Park is sometimes gained by crossing other Federal or Tribal lands. On some North and South Rim areas, primitive roads through National Forest Service lands access remote trailheads. In western Park areas, access is through lands administered by the Bureau of Land Management. These Federal agencies do not currently require permits; however, fees and permits may be required in the future under the Recreation Fee Demonstration Program. Visitors to Federal lands are required to comply with applicable regulations for each agency.

Permits are required for use of, or access across, Tribal lands adjacent to Grand Canyon National Park. Navajo, Havasupai, and Hualapai Tribal lands share boundaries with Grand Canyon National Park. Access permits must be obtained from each Tribal government. Through the government-to-government consultation process, the Tribes requested that the park work with them to establish a system that ensures visitors have both Park and Tribal permits. This Plan establishes a cooperative recreational use permitting strategy with the Navajo, Havasupai, and Hualapai Tribes. (See Chapter 16, Implementation Schedule). Specific information on permit requirements for Tribal lands are outlined in Appendix E, Recreational Opportunities and Permit Information for Adjacent Lands.

## 5.5 Administrative Use

Park staff conducting work related to resource protection, visitor contact, or other administrative duties are not required to obtain a permit for overnight use. These activities include natural, cultural and recreational monitoring such as monitoring water quality, wildlife, caves, campsites, and archeological sites; routine ranger patrols; and trail maintenance. Park group-size limits depend on the project's scope, and will be determined through the Minimum Requirement Decision Process (See Appendix D). Park staff must provide the Backcountry Office with dates and location of scheduled work. When appropriate, this information will be conveyed to visitors.

### scientific studies

Individuals or groups conducting scientific studies in the Park must first obtain a research and/or collecting permit; applications are due at least 90 days in advance of planned field activities. See Chapter 12 for information on the research permit process.

Projects requiring access to restricted locations or popular backcountry use areas may require more than 90 days to review and process. Non-park researchers must obtain a permit for overnight use, and should submit a backcountry permit application through the research office at the same time the research and/or collecting permit is submitted. The Research Office and Backcountry Office will coordinate the review and approval of backcountry permits for

scientific studies. Group-size limits depend on project scope, and will be determined through the Minimum Requirement Decision Process (See Appendix D.)

### Organized Groups

An organized group is any number of persons united for some purpose, whether commercial or noncommercial. See Appendices G, Backcountry Reservation and Permit System, and I, Commercial Use Policy, for permit information.

## 5.6 summary of Changes and Actions

- Upgrade automated reservations system, and improve customer service by increased staffing, communications, and hours of operation
- Distribute quarterly wilderness-use statistics to Wilderness District, Trail Crew, Interpretive Staff and Science Center to facilitate wilderness management
- Show educational video in Backcountry Office and Visitor Centers, and distribute to permit holders
- In cooperation with the Navajo, Havasupai, and Hualapai Tribes, establish a cooperative permitting system for use on Tribal and Park lands.





## CHAPTER 6

### WILDERNESS CAMPSITE MANAGEMENT

#### 6.1 Issues and Public Concerns

The primary issues of wilderness campsite management are related to the amount and type of impacts to natural and cultural resources, and the distribution of campsites and subsequent effects on visitor experience. Long-term monitoring programs have documented campsite and trail conditions and impacts to archeological sites.

Two issues identified in the June 1995 Public Scoping process specifically addressed concerns related to campsite management, 1) use-area boundaries, and 2) group-size limits.

Several suggestions for addressing concerns related to visitor impacts at popular campsites were made. Those most often mentioned were to reduce the number of permits (and use), and to provide more information and education on wilderness camping practices.

Those who expressed support for changes in use-area boundaries focused on greater opportunities for solitude, and supported dispersal of use. Several suggestions were made on how to divide use-area boundaries, recommending adjustments based on terrain and geologic formations. Rather than adjusting use-area boundaries, some suggested evaluating the management zoning and camping classifications (designated versus at-large).

The vast majority of respondents did not support increased group-size limits. Many supported a smaller group size (a limit of six was most often mentioned). Several individuals expressed dissatisfaction with encounters made with larger groups; and some inferred that a smaller group size is more closely related to a wilderness experience.

#### 6.2 Use-Area Allocation

The wilderness of Grand Canyon National Park is divided into 88 overnight use areas. Each use area describes a specific land area, and has an established camping capacity. To the extent possible, use-area boundaries have been defined according to identifiable topographic features such as ridge tops and drainages, and vary in size from several hundred to several thousand acres. Each use area has an overnight camping capacity based on the area's size, the number of suitable and available camping sites, management zoning or Opportunity Class, and its use history.

The strategy for allocating by use areas was adopted in the 1983 Backcountry Management Plan. Prior to this, permits were issued for the wilderness areas by trailhead entry. Each major trailhead had a daily quota which allowed a defined number of groups. In some cases, one trailhead provided access to several use areas but visitors typically congregated in a specific area such as Hermit Camp. As a result, irreversible impacts to natural features and cultural sites occurred, and the high number of people at camps did not provide the desired wilderness experience. The use-area

strategy serves as a management tool for dispersing use for resource protection and preservation of wilderness values such as opportunities for solitude.

As described in Chapter Three, the Opportunity Classes define management objectives for resource, social, and managerial settings of each management zone. Each use area by definition falls into an Opportunity Class, and overall management of the use area is based on specific management objectives and standards.

The wilderness-use allocation system is based on the number and size of overnight groups. In use areas with designated camping, the number of groups allowed is determined by the number of campsites that are, in turn, based on the levels of impacts a particular area can tolerate. Management objectives for providing a range of opportunities and experiences including solitude, warrant lower use allocations. In addition, the Park's vast, remote use areas defined by geologic complexity, lend themselves well to use dispersal, and, as defined in the Wilderness Act, "outstanding opportunities for solitude or a primitive and unconfined type of recreation."

A complete listing of use areas with an explanation of the system for assigning codes is included as Appendix K, Use Area Classification and Limits.

### 6.3 Campsite Classification

Three types of camping exist within the backcountry and wilderness areas of Grand Canyon National Park. Camping within the nonwilderness Cross-Canyon Corridor is restricted to developed campgrounds at three locations: Cottonwood, Bright Angel, and Indian Garden. Primitive designated campsites are located in the wilderness areas which receive high use levels and are typically concentrated near water sources. Unrestricted, at-large camping is available in over 90% of the wilderness use areas. Table 6.1 shows the proportion of campsite types by Opportunity Class.

#### Designated-site Camping

Camping at designated locations is required when necessary to limit further resource degradation and to restrict intensive use of previously disturbed areas. There are use areas in the Threshold Opportunity Class with campsites that have been designated because of archeological, resource protection, aesthetic, and sociological considerations. Where designated campsites exist, backcountry users may not select other campsites. In some use areas within the Primitive Opportunity Class, camping areas have been defined to direct hikers to more resistant areas, and to prevent impacts to fragile and sensitive areas.

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*Edwin Way Teale*

**Figure 6.1**  
**Proportion**  
**of**  
**Wilderness**  
**Campsite**  
**Types by**  
**Opportunity**  
**Class**

	<i>Threshold</i>	<i>Primitive</i>	<i>Wild</i>
<i>Total Use Areas</i>	<i>26</i>	<i>40</i>	<i>22</i>
Designated Sites	62%	2%	0%
At-Large Camping	38%	98%	100%

### *At-large Camping*

Camping in the backcountry at sites other than designated campsites is considered “at-large” camping. In use areas without designated campsites within the Threshold Opportunity Class, as well as those within the Primitive and Wild Opportunity Classes, individuals or groups can camp anywhere in the use area in accordance with minimum-impact camping techniques (See Chapter 10, Interpretation, Education, and Information).

### *River Beach Camping*

Camping on Colorado River beaches is permitted for backcountry hikers, or for those on commercial or private Colorado River trips. Commercial and private river users are required to comply with the specific conditions of their river trip permits. Backcountry users should recognize that differences exist between backcountry and river-use regulations. River-use regulations, for example allow group sizes up to 36 on commercial trips, and require the carry-out of human waste in approved portable toilets. River users are also required to camp

on the resistant post-dam sandbar areas, and not in the fragile desert zones (Colorado River Management Plan 1989). Backpackers may experience frequent contacts with river trips when camping on Colorado River beaches.

### *6.4 Group Size and Use Limits*

In 1993, the group-size limit was reduced from 16 to 11. The determination was based on the recommendations of ecological and sociological wilderness research (Cole 1985; Underhill, et al. 1986; and Hendee, et al. 1990) and National Park Service monitoring programs (Jalbert 1992 and 1993).

The unit of measure for allocating use in use areas is by groups. These are categorized as “small group” consisting of 1-6 persons, and “large group” consisting of 7-11 ) persons. The upper limit on total number of groups (small and large combined) per night is five in the Horseshoe Mesa Use Area. Other use areas within the Threshold Opportunity Class allocate a maximum of four groups per night. Tanner Use Area is the only inner canyon use area within the Primitive Opportunity Class that allows up to

four groups each night. The maximum is three in all other Primitive Use Areas. All but two use areas in the Wild Opportunity Class have a use limit of two small or one large group per night. Fossil and Vishnu Use Areas are limited to one small group or one large group. These limits for the Fossil and Vishnu Use Areas assure the opportunity for an experience without contact with another party or group. In the Cross-Canyon Corridor campgrounds, use limits are based on the total number of campers as well as on the number of groups.

All use areas which have at-large camping have an overnight stay limit of seven nights/use area/trip. The superintendent may approve an extended stay due to a research or resource-monitoring project. The overall trip length, both in number of days and miles, is not limited. In use areas having designated campsites or campgrounds, overnight stays in any one designated campsite or campground are limited to two nights per trip.

### *6.5 Special Management of Use Areas*

A variety of factors necessitates diligent management efforts to maintain the ecologic integrity and cultural significance of heavily visited fragile wilderness areas. Intensive recreational use of popular areas has resulted in deterioration of natural and cultural resources. Additionally, the effects of concentrated use has implications on the quality of experience a visitor may have. For each Opportunity Class, management objectives for campsite condition and distribution have been described (See Chapter

12, Monitoring and Research). When standards are not being met, specific treatments are needed to address resource problems. These treatments may involve a range of actions including rehabilitation, campsite designation, use dispersal to other areas, use reduction, and sensitive area closure. Following is a list of Use Areas which require special management.

#### *Hermit and Monument Use Areas*

The high demand for the Hermit and Monument Use Areas is primarily due to their accessibility and the presence of water. The designated sites for camping in the Hermit and Monument Use Areas are Hermit Creek, Hermit Rapid, Monument Creek, Granite Rapid, Cedar Spring, Salt Creek, and Horn Creek.

At both Hermit Creek and Monument Creek, campsites are located in a cluster of four campsites in close proximity. Toilets are provided at the cluster areas as well as designated sites along the Tonto Trail east of Monument Creek. An administrative site is located near the campsite cluster at Hermit Creek.

Specific problems at both use areas are associated with the presence of archeological sites, impacts to water sources, presence of rodents, and, in the social context, the proximity of campsites to one another.

Maintenance of the backcountry toilets is conducted by mule and by resource river patrol trips (See Appendix D, Minimum Requirement Decision Process). Rehabilitation and restoration work has also been done at each site. These treatments have not been completely successful. A range of alternatives including reduction in use, data recovery at archeological sites, and campsite relocation are being considered in action plans for the Monument Creek and Hermit Creek Use Areas. These management actions are identified in Chapter 16, Implementation Plan and Schedule.

#### *Horseshoe Mesa Use Area*

The Horseshoe Mesa Use Area has relatively easy access and high levels of overnight and day use. Designated campsites are located in two clusters for small and large groups. Toilets are within each cluster.

The actual and potential impacts to fragile cultural resources necessitates the reevaluation of campsite management in this area. The historic remains on Horseshoe Mesa are officially listed on the National Register of Historic Places as the Last Chance Mine Historic District. As a National Register site, the NPS is mandated to manage the area to protect the District's long-term integrity and historic values. Limiting factors in this area are adequate human waste disposal and the protection of cultural resources. Camping is restricted to designated sites, some of which are

currently located near cultural resources. Alternatives to mitigate the impacts to cultural resources will be developed through a separate action plan (See Chapter 16, Implementation Schedule). The range of alternatives will include reduction in overnight use, increased visitor education through staff contacts, printed material and signing, and closure of campsites within the Last Chance Mine Historic District. See Chapter 16, Implementation Plan and Schedule.

#### *Tanner Use Area*

The Tanner Use Area has high use levels on the delta area near the Colorado River. Impacts to concentrations of archeological sites and vegetation in the dunes have resulted in the closure of the sand dune area immediately downstream of Tanner Creek. Campsites and trails have been defined in the sand and cobble areas adjacent to the Colorado River. A composting toilet has been placed experimentally to address human waste and trailing problems. This Plan expands the Tanner Use Area boundaries at the River to allow for greater dispersal of use into resistant areas adjacent to the Colorado River.

#### *Deer Creek Use Area*

One of the most popular destinations is the Deer Creek Use Area. During the summer months, as many as 200 river users visit Deer Creek Falls and the Narrows in a single day (Jalbert 1990 and 1991). The preferred campsites in the Deer Creek valley are within sight of the trail, and archeological sites are located near the high-use area. Human-



caused wildfires (two in the past seven years) have destroyed vegetation and damaged archeological features in this area.

This Plan separates the Deer Creek Use Area from the expansive, rim to river, Indian Hollow Use Area. The new Deer Creek Use Area is managed by the standards described in the Threshold Opportunity Class. A composting toilet has been placed, and the overnight camper limit set at one small and one large group per night in two designated campsites.

#### *Tapeats Use Area*

Although the Tapeats Use Area is remote and access from the rim is difficult, this area is visited frequently by river trips, especially during the summer season. Camping is restricted to two designated areas, Upper Tapeats and Lower Tapeats. Three designated campsites and a toilet are provided at the Upper Tapeats site. The Lower Tapeats Use Area is at the confluence of Tapeats Creek and the Colorado River, and is also a popular camp for river trips.

#### *Clear Creek Use Area*

The Clear Creek Use Area includes the Clear Creek drainage as well as the area on the Tonto Plateau to Sumner Wash (two miles east of the North Kaibab Trail). In the Clear Creek drainage, camping is restricted to areas above the first major side canyon north of the River that enters from the east. Camping on the Colorado River beach

just to the east of the confluence of Clear Creek and the Colorado River is also allowed.

#### *Phantom Creek Use Area*

The Phantom Creek Use Area includes Utah Flats and the Phantom Creek drainage two miles above its confluence with Bright Angel Creek. The Phantom Creek drainage is only open to camping above the major waterfall near the 3600 foot contour line on United States Geological Survey (USGS) maps.

#### *Cape Final Use Area*

This Plan separates the Cape Final Use Area on the North Rim from the Walhalla Use Area. This use area also offers an increasingly popular day hike with views of the Canyon from the rim. Overnight camping is limited to two nights for small groups only at the designated campsite. At-large camping is available in the adjacent Walhalla Use Area.

#### *Other Considerations*

For the Walhalla Plateau, Thompson Canyon, and Robbers Roost Use Areas, access is from the North Rim Entrance and Point Imperial/Cape Royal Roads. Camping is at-large, and campsites must not be visible from paved access roads.

### *6.6 Nonwilderness Use Areas with Semi-Primitive Mechanized Access*

These areas are characterized by a predominately natural setting where use is relatively low, but evident. Use dispersal is achieved by designated-site camping. Motorized use is permitted. (Manning 1986; U.S. Department of Agriculture, Forest Service 1982) Within the wilderness, a 300-foot wide nonwilderness road corridor will be retained in a primitive state to provide mechanized access. The following use areas are accessible by primitive roads within the Semi-Primitive Mechanized Opportunity Class.

#### *Point Sublime Use Area*

The Point Sublime Use Area on the North Rim is a popular day use and overnight destination. This area is reached by the Point Sublime Road, and is excluded from wilderness for the purpose of providing an overlook site. Two designated sites for one small and one large group are located away from the popular rim viewpoint. Overnight camping is limited to two nights.

#### *Swamp Ridge Complex*

Within the Swamp Ridge Cluster, two designated campsites and at-large camping are accessible by primitive roads. Overnight use is limited to two nights at the designated campsites.

*Fire Point* is a popular rim viewpoint and camping area within wilderness, and is reached by travelling Forest Service roads to the Park boundary. Users of the Fire Point designated site must park near the boundary fence and hike approximately one mile into the campsite. One designated campsite accommodates one large or one small group per night.

*Swamp Point* is popular rim viewpoint, campsite, and trailhead to the North Bass Trail and Powell Plateau. Two designated campsites are located here: one at the trailhead, and the other adjacent to the road within the nonwilderness corridor. The campsite at the trailhead is intended for use by those doing an inner canyon trip. The limit is two large or two small groups per night.

*Swamp Ridge Use Area* is open to at-large camping, and is accessible by primitive roads.

#### *Pasture Wash Complex*

The Pasture Wash Use Areas are accessible by high-clearance vehicles during most of the year; heavy rains and snow may make the roads impassable requiring temporary closures for re-

source protection. Use areas within the cluster are managed as designated and at-large camping. Overnight use is limited to two nights at designated campsites.

#### *Signal Hill and Ruby Point*

each location has one designated campsite located on the Boundary Road toward Havasupai Point. Camping is limited to one small group at each site with a maximum of two vehicles per group. Havasupai Point is designated for day-use only, camping is not allowed.

*South Bass Trailhead* has two designated campsites. Groups planning hikes into the South Bass Use Area must also have a permit for the trailhead designated campsites if they plan to camp on the rim prior to their hike. Two designated campsites accommodate one large or two small groups.

*Pasture Wash* At-large campsites to the southwest of the Pasture Wash Ranger Station must not be visible from access roads. Designated campsites are located at the South Bass Trailhead and along the Havasupai Point Road. Camping is not allowed near the historic Pasture Wash Ranger Station or at the Havasupai point overlook area.

#### *Eremita Mesa Use Area*

Access to the new Eremita Mesa Use Area is by the Boundary Road. Road conditions may limit access as described for the Pasture Wash Use Area. At-large camping is limited to one large and one small group per night.

### *6.7 Resource Protection and Stewardship*

The primary dimensions of recreation management in wilderness (to provide visitors the opportunity for quality wilderness experiences and to limit the resource site impacts caused by visitor use), are not separate or distinct concepts (Hendee, et al. 1990). The interrelationship between these two aspects of managing visitor use in wilderness presents a challenge for managers. Many resource impacts (such as litter and vandalism) affect visitor experience, and reducing impacts improves experience. However, some management actions taken to control impacts may restrict visitors in ways that adversely affect their experience (e.g., signs, closures, and designated campsites).

Management of resource impacts to campsites, trails, and associated activities requires an understanding of visitor behaviors as well as the affects of treating these problems. This involves an interdisciplinary strategy to achieve management objectives. To that end, Park staff play various roles in campsite management.

Figure 6.2 describes the general staff responsibilities associated with wilderness campsite management.

### *6.8 summary of Use Area Changes*

Changes in use patterns, resource conditions, and increased demand have required a reevaluation of use-area classification and allocations. As previously stated, the primary purpose of allocating use is to maintain the standards described for natural, cultural, and experiential wilderness values. The use area changes allow for a slight increase overall in wilderness use levels. In many of the popular areas visitor use is concentrated, and by separating these sites from the larger use area, a broader range of opportunities is provided. Many of the changes also provide for a more appropriate level of management.

Other use area changes not included in the previous sections reflect use-area boundary changes. Use-area changes are summarized in Figure 6.3, and are included in Appendix K, Use Area Classification and Limits.

Upon approval of this Plan, the National Park Service will produce a map which will include these use-area boundary and classification changes, wilderness boundaries and primitive roads.

**Figure 6.2**  
*Responsibilities Associated with Campsite Management*

	<i>Inventory</i>	<i>Monitoring</i>	<i>Visitor Education</i>	<i>Resource Protection</i>
<i>Wilderness Ranger</i>	✓	✓	✓	✓
<i>Natural Resource Specialist</i>	✓	✓	✓	✓
<i>Recreation Researcher</i>	✓	✓	✓	✓
<i>Archaeologist</i>	✓	✓	✓	✓
<i>Interpretive Specialist</i>			✓	✓

<i>Use Area Name and Code</i>	<i>Nature of change</i>
Badger (AA9)	Extend boundary to include Nine-Mile Canyon
Soap Creek (AB0)	New. Formerly within Rider Use Area. Primitive Use Area with at-large camping
Rider (AB9)	Extend boundary to include 19 Mile Canyon
Walhalla Plateau (NA0)	Redefine boundaries, decrease total area. Create NA8 and NC9 (See below)
Cape Final (NA1)	New. Formerly within Walhalla. Manage as separate Threshold Use Area with designated campsites
Ken Patrick (NC9)	New. Formerly within Walhalla. Manage as separate Primitive Use Area with at-large camping
Thompson Canyon (NB9)	Change to Wild classification
Robbers Roost (ND9)	Boundary change. Extend boundary to include a portion of the Basin north of access road, and toward Point Sublime
Outlet (NG9)	Boundary change. Includes a portion of the Basin south of access road.
Point Sublime (NH1)	Reduction of total area (See ND9). Manage as Threshold Use Area with mechanized access and designated campsites.
Swamp Point (NJ2)	Separate from Swamp Ridge. Manage as Primitive Use Area with mechanized access and designated camp areas.
Fire Point (NJ1)	Separate from Swamp Ridge. Manage as Primitive Use Area with mechanized access to Park boundary and designated campsite
Indian Hollow (AN9)	Formerly called Deer Creek. Does not include high-use area in Deer Creek Valley
Deer Creek (AX7)	Separate Deer Creek valley from expansive area. Threshold Use Area with designated campsites
Tanner (BB9)	Extend boundaries at river to drainage at Basalt Rapids
Eremita Mesa (SC9)	Separate from SE9. Manage as Primitive Use Area with mechanized access and at-large camping
Pasture Wash (SE1, SE2, SE3, SE0)	Reduction in total area (See SC9). Designate campsites at South Bass Trailhead and along Havasupai Point Road

*Figure 6.3  
summary of  
Use Area  
Changes*





## Chapter 7

### Trails Management

**G**rand Canyon National Park has over 400 miles of established trails, of which 375 miles lie outside the routinely maintained Cross-Canyon Corridor. Eighteen of these wilderness trails (approximately 260 miles) contain historic features (i.e., retaining walls, tread riprap, log cribbing, etc.), and ten have been determined eligible for the National Register of Historic Places. Most trails have received little or no stabilization or rehabilitation since Park establishment over 75 years ago. Consequently, these trails are in various states of disrepair as cultural features and natural components deteriorate.

Trail standards are necessary to meet the 1995 General Management Plan's management objectives to provide a variety of primitive recreational opportunities consistent with wilderness and NPS policies on accessibility. Standards are also necessary to meet the objectives of this Wilderness Management Plan (See Chapter 1, Introduction) by providing a trail system consistent with wilderness values, including protection of natural and cultural resources, and preservation of the character of individual trails.

The NPS will conduct administrative activities for trail maintenance in a manner consistent with *NPS Management Policies* regarding wilderness management and the use of Minimum Requirements (See Appendix D, Minimum Requirement Decision Process).

### 7.1 Criteria for Establishing Trail standards and specifications

Trails are widely recognized as consistent with wilderness. Controversy can center on the appropriateness of trail type. Research indicates that wilderness visitors favor low-standard trails (somewhat like a game trail—narrow, varying grade, winding, not the shortest route) more than high-standard trails (wide, steady grades, fairly straight) (Lucas 1980).

In 1988, Grand Canyon adopted specific trail standards based on these criteria:

- Natural Resource Protection
- Cultural Resource Protection and Stabilization
- Management Zone Classification
- Trail Character and Visitor Experience
- Recreational Use Levels
- Visitor Safety

Regarding visitor safety, *NPS Management Policies* (6:8), states

*[p]ark visitors must accept wilderness largely on its own terms, without modern facilities provided for their comfort or convenience. Users must also accept certain risks, including possible dangers arising from wildlife, weather conditions, physical features, and other natural phenomena, that are inherent in the various elements and conditions that comprise a wilderness experience and primitive methods of travel.*

## 7.2 Trail Classification

Trail classification is specified by the *NPS Trails Management Handbook* (1983). Classification of each trail includes both trail type and maintenance level.

### *Types of Trails*

*Type A Major Trails*  
(nonwilderness: Cross-Canyon Corridor and Arizona Trail). Trails are marked routes improved and maintained for foot and horseback traffic. They may contain bridges, corduroy elements, drainages, and necessary shelters.

*Type B Minor Trails*  
These trails are marked, improved, and maintained to accommodate foot or horseback traffic, but contain an overall lower construction standard than Type A.

*Type C Wilderness Trails*  
These trails are marked, but are generally unimproved except for clearing and some work on eroding or dangerous areas.

### *Maintenance Levels*

*Level I*  
Maintained for high use. Traffic is heavy. Maintained at the highest level.

*Level II*  
Traffic is medium to heavy. Tread is maintained at a high standard for user convenience and comfort. Requires high maintenance.

#### *Level III*

Maintained for intermediate use. Traffic is medium. Tread is maintained for user convenience.

#### *Level IV*

These trails are maintained for semi-primitive use. Traffic is low to medium. The tread is often not smooth, having a dirt and rock surface. Maintained for either foot or horse use. Less maintenance is required than on the previous levels.

#### *Level V*

Maintained for primitive use. Traffic is low. These foot trails require custodial care. Minimal maintenance is required.

## 7.3 Grand Canyon Trail Standards

Each of the Park's 63 established trails is classified by type and level of maintenance. The standards, based on trail classification, are described in three categories as follows. Figure 7.1 details the complete list of trails, classification, and trail mileage.

### *Corridor Trails (Nonwilderness)*

#### *Type A, Level I*

The North Kaibab, South Kaibab, Bright Angel, Plateau Point, River, and the Tonto between Bright Angel and South Kaibab, are designated *Corridor Trails*. The Arizona Trail also falls under this category.

*Something will  
have gone out  
of us as a  
people if we  
ever let the  
remaining  
wilderness be  
destroyed.*

*Wallace Stegner  
Wilderness  
Letter  
1960*

### ***Threshold Trails***

*Generally Type B, Level IV*

These trails are constructed with significant historic features within or leading to use areas within the Threshold Opportunity Class.

Trail maintenance will be performed on previously constructed sections to protect the integrity of historical features including outside retaining walls, rock riprap, log cribbing, and drainage structures.

Trail width should be a maximum of 18 inches, except where historically constructed to wider dimensions, or where environmental conditions require wider tread (e.g., switchback junctions). Average trail width of 12 to 15 inches on relatively level sections should be preserved.

Slough removal to a minimum safe trail width (8 to 12 inches, depending on slide slope angle) will be conducted. A 10% out-slope of trail tread (one-inch drop for every ten inches of tread width) will be attempted where possible to facilitate drainage. Outside berm should generally be removed, unless environmental considerations support retention of the feature.

Loose rock removal may be conducted. Obstructive tree limbs or brush may be cut or removed to prevent detours and multiple trailing. Drainage structures (waterbars, drainage dips, check dams, sand ladders) may be used as necessary to correct trail

erosion. The discriminate placement of essential cairns is permitted.

Threshold trails include the Hermit, Clear Creek, Thunder River, Whitmore, and Grandview Trails.

### ***Primitive Trails***

*Type C (wilderness), Level V*

Constructed historic features are absent or much less evident than those present on Threshold Trails.

Trail maintenance will consist of resource rehabilitation efforts at impacted sections, including stabilization of historic features. Trail width should be an average maximum of 18 inches, unless environmental considerations require a wider tread. Low-key maintenance techniques such as out-sloping and drainage dips may be used where necessary.

Multiple trail eradication and route delineation and/or minor relocation may be necessary to mitigate resource damage. In areas of severe or potentially severe resource damage, rock or log checks, waterbars or cribbing may be used. Outside rock retaining lining, buried and generally no more than two layers high, may be used to control sloughing on traverses. The discriminate placement of essential cairns is permitted.

Primitive trails include: Havasu, South Bass, Tonto, Boucher, Hance, Tanner, Beamer, South Canyon, Nankoweap, North Bass, Deer Creek, Kanab Creek, Tuckup, Lava Falls, and river-attraction-site trails.

### *Routes or Wild Trails*

Routes or wild trails are defined as a nondelineated access with no evident historical trail construction and minimal user-defined path development. Rehabilitation on such routes will be to mitigate unacceptable resource damage only. Once an impacted section is identified, and appropriate clearances are conducted, rehabilitation efforts not to exceed Primitive Trail (Type C, Level V) standards may be undertaken for the specified site.

### *Borrow Pits*

The need to use borrow pits for trail maintenance will be minimized; trail maintenance materials will be brought from outside the Park whenever possible (U.S. Department of the Interior, National Park Service 1991a, *Special Directive 91*; and *NPS Management Policies* 1988). This direction is also provided in the GMP (1995:10,17,55).

### *7.4 Monitoring*

The focus of trail management is on specific problem segments. The probability that any trail segment will deteriorate is a function of the trail's immediate environment, its design and maintenance, and the amount, type and timing of use it receives. The factors that most influence trail conditions are trail location and design. This suggests that the principal solutions to trail problems involve increasing the ability of the trail to withstand use (through improved engineering) or changing the location of the trail to one that is more capable of

withstanding use. Problem segments are identified, and those segments are either redesigned or relocated. Experience demonstrates that a descriptive log of trail problems and prescriptive actions will usually be more useful than a system of trail-monitoring samples (Cole 1991). Grand Canyon currently maintains a log of trail problems.

### *7.5 The Arizona Trail*

The Arizona Trail will be completed as an unpaved trail from Grand Canyon Village to Kaibab National Forest lands on the South Rim, and, on North Rim, to connect the Kaibab National Forest section to the North Kaibab Trail. It will be used for hiking, biking, and horseback riding (GMP 1995:28, 45, 55). The Cross-Canyon Corridor trail system will be designated as part of the Arizona Trail, but restrictions on bicycle, livestock, and overnight hiking use will continue, consistent with this Wilderness Management Plan.

### *7.6 Restoration and Implementation Priorities*

As mentioned above, over 400 miles of wilderness trails wind through the canyons and rimlands of Grand Canyon National Park. During the past decade, Park staff conducted trail-condition surveys on approximately 150 miles of this system. Based upon these surveys, the NPS identified the following trails or trail complexes as high priority maintenance efforts:

### *Hermit Trail Complex*

(Hermit, Hermit Creek, Waldron, and Dripping Spring Trails; 16 miles). The Park conducted intensive restoration efforts on sections of the Hermit Trail during the 1997 season. This popular trail complex contains abundant historical features consisting of unique stone riprap and stone-retaining walls. Landslides, rockfall, and intense runoff adversely impacted significant sections of the complex. The 1997 maintenance effort mitigated many of the most seriously damaged sections of the main Hermit Trail. Additional restoration work is required on sections of the Dripping Spring and Waldron Trails. Minimal routine maintenance is necessary to protect the natural and cultural values of the trail and its immediate environment.

### *Grandview Trail Complex*

(Grandview, Horseshoe Mesa, Page Springs, and Cottonwood Trails; 7 miles). The Park conducted intensive restoration efforts on sections of the Grandview Trail during the 1997 season. This popular trail contains abundant historical features consisting of unique stone riprap and stone-retaining walls similar to the Hermit. The 1997 maintenance effort mitigated many of the most seriously damaged sections of the main Grandview Trail, although substantial restoration work is required on sections of the Page Springs and Cottonwood Creek Trails.

### *Thunder River/Deer Creek Complex*

(Thunder River, Deer Creek, and Tapeats Trails; 20 miles). This popular and extensive trail system consists of the Bill Hall (Monument Point), Thunder River (Indian Hollow), and Deer Creek access trails. Portions of the Thunder River Trail, probably the oldest Anglo-constructed trail in the Canyon, contain historic features possibly dating back to the 1870s (Dutton 1882). Park staff have routinely performed maintenance and reconstruction of trail sections since 1980. Restoration of the Redwall section and some historic retaining walls near Indian Hollow is still needed, as is periodic minimal maintenance of the entire trail complex.

### *Colorado River Trails*

The Colorado River provides ready access to approximately 70 miles of wilderness trails. The NPS routinely conducts winter river trips addressing restoration and routine maintenance of these important access routes.

### *Rim Access Trails*

(Tanner, New Hance, South Bass, South Canyon and Nankoweap Trails; 47 miles). These historic, primitive trails provide important access to the inner canyon. The upper (Kaibab to the base of the Redwall) reaches of each trail contain severely eroded sections, resulting in significant damage to soil and vegetation, as well as loss of historic features.

### *The Old Bright Angel Trail*

This trail will be slightly upgraded from route/wild trail standards to primitive trail standards (GMP 1995:57).

Restoration and maintenance efforts directed at the wilderness trail system traditionally relied on special funding and volunteer programs. Currently, the NPS is actively pursuing long-term funding for a professional workforce to continue this important program. An implementation schedule, based on the priorities identified above, will be developed and implemented as funding becomes available (See Chapter 16, Implementation Schedule). Continued survey and monitoring efforts may identify additional priority sections.

### *7.7 Other Considerations*

The Hermit and Grandview Trails will be suggested as alternatives to the Cross-Canyon Corridor trails for visitors with experience hiking in the Grand Canyon. However, neither trail use nor maintenance will be increased to levels that will alter their status as threshold trails. The Hermit and Grandview Trails will also be the subject of a separate monitoring program and carrying-capacity study to ensure that resources and visitor experiences do not significantly change on those trails as a result of dispersing some corridor trail use to them. Measures may be taken if carrying capacities are exceeded (GMP 1995:55).

### *7.8 Summary of Changes and Actions*

See Figure 7.2 for a list of actions mentioned in this chapter.



**Figure 7.1**  
**Grand**  
**Canyon**  
**National**  
**Park Trails**

<i>Trail</i>	<i>Classification</i>	<i>Mileage</i>
<b>Arizona Trail</b>	<b>Corridor</b>	<b>11.0</b>
Basin	Primitive	9.2
<b>Beamer</b>	<b>Primitive</b>	<b>8.0</b>
Bill Hall (Monument Point)	Threshold	2.6
<b>Boucher</b>	<b>Primitive</b>	<b>11.0</b>
Brady Hollow	Primitive	9.0
<b>Bright Angel*</b>	<b>Corridor</b>	<b>7.8</b>
Cape Final	Primitive	2.0
<b>Cape Solitude</b>	<b>Primitive</b>	<b>9.6</b>
Carbon-Chuar Creek	Primitive	3.2
<b>Clear Creek</b>	<b>Threshold</b>	<b>9.0</b>
Cliff Springs	Threshold	0.42
<b>Colorado River Trail*</b>	<b>Corridor</b>	<b>1.8</b>
Cove	Threshold	10.0
<b>Cottonwood Creek</b>	<b>Threshold</b>	<b>1.26</b>
Deer Creek/Deer Springs	Threshold	1.33
<b>Dripping Spring</b>	<b>Threshold</b>	<b>4.6</b>
Fire Point	Threshold	1.0
<b>Fort Garrett</b>	<b>Primitive</b>	<b>1.0</b>
Francois Matthes Point	Primitive	4.7
<b>Grandview*</b>	<b>Threshold</b>	<b>3.2</b>
Great Thumb Point	Primitive	2.0
<b>Havas Creek</b>	<b>Primitive</b>	<b>3.3</b>
Hermit Trail*	Threshold	8.0
<b>Hermit Creek</b>	<b>Primitive</b>	<b>1.1</b>
Horseshoe Mesa	Primitive	1.5
<b>Kanab Plateau</b>	<b>Primitive</b>	<b>10.0</b>
Ken Patrick	Primitive	8.6
<b>Komo Point</b>	<b>Primitive</b>	<b>5.0</b>
Lava Trail	Primitive	1.5
<b>Little Colorado River</b>	<b>Primitive</b>	<b>1.6</b>
Long Jim	Threshold	3.9
<b>Monument Canyon</b>	<b>Threshold</b>	<b>1.5</b>
Nankoweap	Primitive	14.0
<b>New Hance*</b>	<b>Primitive</b>	<b>7.5</b>
North Bass*	Primitive	14.0
<b>North Kaibab*</b>	<b>Corridor</b>	<b>14.0</b>
Old Bright Angel (N. Kaibab)	Primitive	7.0
<b>Page Springs</b>	<b>Threshold</b>	<b>0.86</b>
Powell Plateau	Threshold	1.2
<b>Plateau Point</b>	<b>Corridor</b>	<b>1.5</b>
Ribbon Falls	Threshold	0.5
<b>Saddle Canyon</b>	<b>Primitive</b>	<b>0.7</b>
South Bass*	Threshold	9.0
<b>South Canyon</b>	<b>Primitive</b>	<b>6.2</b>
South Kaibab*	Corridor	7.3
<b>Stone Creek</b>	<b>Primitive</b>	<b>2.06</b>
Surprise Valley	Primitive	1.6

<i>Trail</i>	<i>Classification</i>	<i>Mileage</i>
<b>Tanner</b>	<b>Primitive</b>	<b>8.1</b>
Tapeats Creek	Threshold	3.2
<b>Tapeats/Deer River Trail</b>	<b>Primitive</b>	<b>1.9</b>
Tiyo Point	Primitive	6.2
<b>Tonto</b>	<b>Primitive</b>	<b>72.0</b>
Thunder River*	Threshold	10.5
<b>Tuckup</b>	<b>Primitive</b>	<b>64.0</b>
Uncle Jim	Threshold	3.4
<b>Upper Ribbon Falls</b>	<b>Primitive</b>	<b>1.0</b>
Waldron	Threshold	2.0
<b>Walhalla Glades</b>	<b>Primitive</b>	<b>7.5</b>
Walhalla Spur	Primitive	2.7
<b>Whitmore</b>	<b>Threshold</b>	<b>1.2</b>
Widforss Point	Primitive	4.7
<b>Widforss</b>	<b>Primitive</b>	<b>4.0</b>
<b>63 Trails</b>	<b>Total Miles: 439.53</b>	

\*Eligible  
properties  
for the  
National  
Register of  
Historic  
Places

**Figure  
7.2  
Summary  
of Actions**

<i>Trail/Complex</i>	<i>Miles</i>	<i>Management Action/ Treatment</i>
<i>Hermit Trail Complex</i>	<i>16</i>	<i>Hermit Trail:</i> restoration in 1997. <i>Dripping Spring and Waldron Trails:</i> restoration work needed. Schedule routine/cyclic maintenance of each trail following restoration work.
<i>Grandview Trail Complex</i>	<i>7</i>	<i>Grandview Trail:</i> restoration in 1997 <i>Page Spring/Cottonwood Creek Trails:</i> restoration work needed. Schedule routine/cyclic maintenance of each trail following restoration work.
<i>Thunder River/ Deer Creek Complex</i>	<i>20</i>	<i>Thunder River/Deer Creek Trails:</i> routine maintenance conducted during winter river restoration trips. <i>Bill Hall and Surprise Valley Trails:</i> Routine/cyclic maintenance conducted during winter river restoration trips.
<i>Colorado River Trails</i>	<i>~70</i>	Routine/cyclic maintenance conducted during winter river restoration trips.
<i>Rim Access Trails</i>	<i>~47</i>	<i>Tanner, New Hance, South Bass, South Canyon, Nankoweap:</i> Restoration of upper reaches; periodic maintenance.
<i>Old Bright Angel Trail</i>	<i>4.1</i>	Upgrade to primitive trail standards.



## CHAPTER

## 8

Semi-  
Primitive  
Access  
and  
Facilities

In accordance with the Final Wilderness Recommendation, the NPS will retain ten primitive roads to overlooks and trailheads in the Park. At least 15 other primitive roads on adjacent public lands provide access to Grand Canyon scenic overlooks (See Appendix E, Recreational Opportunities and Permit Information for Adjacent Lands). With the exception of the ten Grand Canyon primitive roads described below, all other roads in the proposed wilderness will be closed and returned to a natural state or converted to trails (See Appendix L, Natural Conditions). This position is consistent with *NPS Management Policies* (6.5) which states that permanent roads will not be built or retained in wilderness. Where abandoned roads have been included within wilderness, they will be used as trails or restored to natural conditions. The Wilderness Recommendation identifies approximately 70 miles of primitive roads on the Kanab Plateau, approximately 40 miles on the Kaibab Plateau, and an estimated 20 miles elsewhere in the Park for either conversion to trails or restoration.

### 8.1 Issues and Public Concerns

As mentioned above, the Final Wilderness Recommendation identifies approximately 130 miles of primitive roads that will be restored to a natural condition or converted to trails. Roads result in significant resource impacts. The additional vehicular access provided by primitive roads facilitates illegal excavating and collecting of archaeological resources. For example, improvement

in mine-related roads in the 1980s outside the Park resulted in an increase of visitors to the Kanab Plateau, and a corresponding increase in vandalism to cultural resources (Huffman 1993).

In addition to impacts on archaeological resources, adequate maintenance of primitive roads in remote locations imposes significant costs. Poorly located or unmaintained roads often result in serious erosional problems (Moll 1996; Ketcheson and Megahan 1996). Severe gully formation negatively impacts soils, vegetation, and Park archaeological resources. The most practical and economical long-term mitigation of these problems lies with closure and revegetation (Moll 1996; Fleischner 1992). Primitive roads, maintained or not, create adverse impacts on natural resources. For example:

- Vehicular traffic directly destroys biological resources by crushing vegetation and microbiotic crusts, and retards revegetation through soil compaction.
- Disturbed surfaces provide ideal habitat and avenues for exotic plants to spread (Amor and Stevens 1976). *NPS Management Policies* (4:12) require management of exotic species whenever prudent or feasible. The restoration of disturbed areas is an important management tool for protecting native biodiversity.

- Other undesirable consequences of road access include illegal collecting of rare plants and animals (Noss 1995).

- Even though roads occupy a small fraction of the landscape in terms of total area, their influence extends far beyond their immediate boundaries. Roads precipitate habitat fragmentation by dissecting otherwise large patches into smaller ones, and thus creating edge habitat along both sides of the road, potentially at the expense of interior habitat (Reed, Barnard, and Baker 1996).

- Roads result in frequent and often negative encounters between wildlife and humans (Buckley and Pannell 1990; Stankey 1980). Wildlife biologists have recognized problems with open roads that expose large mammals such as deer, cougar and bighorn sheep to heavy hunting pressure, poaching, and harassment. Open-road density has been found to be a good predictor of habitat suitability for large mammals, with habitat effectiveness and population viability declining as road density increases (Noss and Cooperrider 1994). Studies have indicated that in order to protect species sensitive to legal or illegal hunting and persecution, habitat must have low road density (Thiel 1985; Mech, Fritts, Raddle, and Paul 1988).

During the Public Scoping Process for this Plan, people were asked to comment about Grand Canyon back-

country and wilderness toilets. The majority of respondents stated that toilets are needed in popular areas. Many felt that toilets were not intrusive, and were a solution to dealing with human waste, toilet paper, and wildfires caused by burning toilet paper. Several suggestions were made for location, type, and design of toilet structures in the backcountry. Of those who did not support placement of toilets, some felt they were intrusive and did not belong in a wilderness setting. Others suggested alternative ways for dealing with the problem of human-waste disposal such as a carry-out system and better education.

Very few comments on roads were received. General comments regarding road access included support for maintaining primitive access to Pasture Wash and Swamp Ridge, and closing the road to Cape Solitude.

## **8.2 Primitive Roads Management**

Primitive roads will be managed according to standards set forth in the Semi-Primitive Mechanized Access in Nonwilderness Corridors section of this Plan (Chapter 3, Wilderness Management Planning Framework). This is a modified version of the Forest Service's Semi-Primitive Motorized Recreation Opportunity Spectrum classification (U.S. Department of Agriculture, Forest Service 1982), and constitutes a separate Opportunity Class. The Semi-Primitive Mecha-

*The hour is late, the opportunities diminish with each passing year, and we must establish here a Common Market of conservation knowledge which will enable us to achieve our highest goals and broadest purposes. With each day that passes, the natural world shrinks as we exert greater artificial control over our environment.*

*Stewart L. Udall*



**Figure 8.1**  
**Primitive**  
**Roads**  
**Open to**  
**Trailheads**  
**and**  
**Overlooks**

<i>Trailhead or Overlook</i>	<i>Access</i>
<i>North Rim</i> 1 North Bass Trailhead 2 Point Sublime	1 Swamp Point Road 7.5 miles 2 Point Sublime Road 14.7 miles
<i>Kanab Plateau</i> 1 Kanab Point 2 SB Point 3 150 Mile Canyon Trailhead 4 Tuckup Canyon Trailhead	1 Kanab Point Road 4.4 miles 2 SB Point Road 7.7 miles 3 150 Mile Canyon Road 5.9 miles 4 Tuckup Canyon Road 8.4 miles
<i>Tuweep</i> 1 Toroweap Overlook 2 Lava Trailhead	1 Tuweep Road 6.6 miles 2 Vulcan's Throne Road 2.0 miles
<i>South Rim</i> 1 Havasupai Point 2 South Bass Trailhead	1 Havasupai Point Road 2.7 miles 2 Pasture Wash Road 4.2 miles

nized Opportunity Class consists of nonwilderness corridors with the following characteristics:

- the area is predominantly natural in appearance
- interaction between users is low
- evidence of other users is present
- camping is permitted only in designated sites
- wilderness group-size limits apply
- mechanized (motorized and bicycle) access is permitted

Figure 8.1 summarizes primitive road access to trailheads and overlooks. The map, Figure 8.2, shows road locations.

### *Primitive Roads standards*

Nonwilderness corridors containing primitive roads are generally 300-foot wide (See 1993 Wilderness Update).

The NPS will maintain these primitive roads in an unpaved condition without major improvements. With the exception of the Tuweep Road, only improvements that reduce resource impacts in keeping the road minimally open for high-clearance or four-wheel-drive vehicles will be considered (GMP:11). The Tuweep Road will remain dirt, and have limited maintenance, with vehicle sizes restricted to a maximum of 22 feet in length (GMP:51).

### *8.3 Primitive Roads to Be Restored or Converted to Trails*

#### *North Rim*

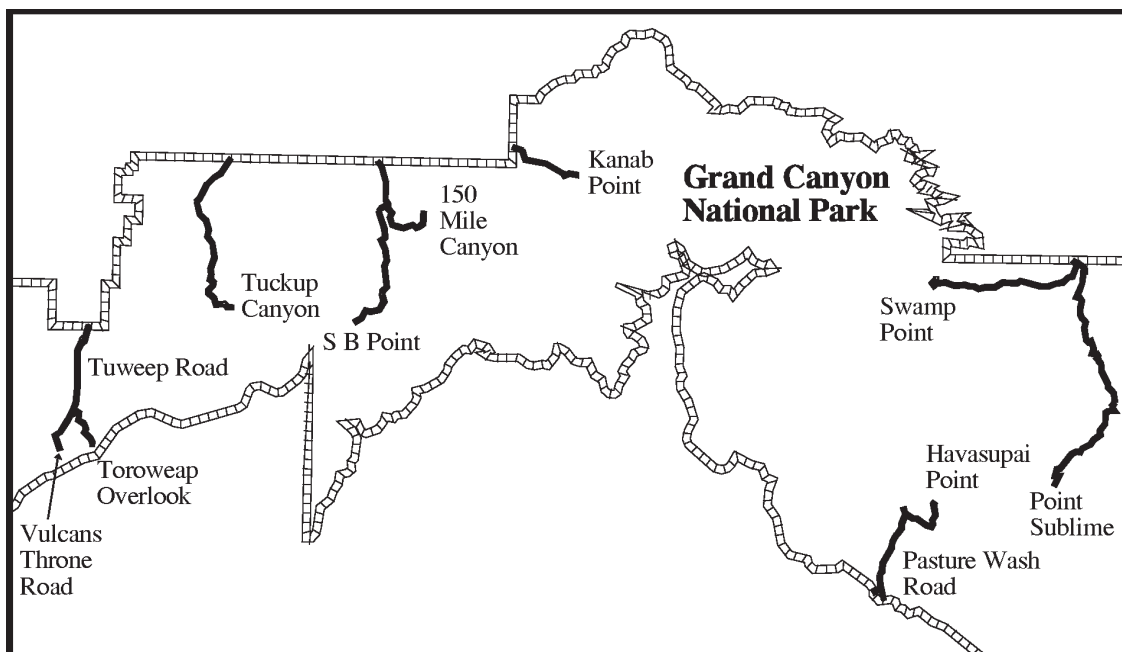
The 1980 Wilderness Recommendation originally called for the closure of most primitive roads in wilderness on the North Rim. "Nonwilderness corridors" providing access to Point Sublime and the North Bass Trailhead are

allowed (U.S. Department of the Interior, National Park Service 1980c). The one-mile road to Fire Point and the 2.7 mile Walhalla Spur will be closed to mechanized access, and converted to hiking trails. The six former "fire roads" (Komo Point, Francois Matthes Point, Walhalla Glades, Widforss, and Tiyo Point), and the section of W-1 from the landfill to its junction with the Point Sublime Road are closed to mechanized access, and designated as wilderness trails. Minimum requirements for emergency situation temporary vehicular access are defined in Appendix D, Minimum Requirement Decision Process and in Chapter 9, Safety and Emergency Operations. Requirements specific to fire management, including minimal trail standards and prescribed fire operations, will be addressed in the upcoming revision of the Fire Management Plan.

### *Kanab Plateau*

The 1993 Final Wilderness Recommendation proposes most of the Kanab Plateau within Grand Canyon National Park for wilderness designation. The exceptions consist of five nonwilderness corridors for mechanized access to trailheads and overlooks.

In order to remain consistent with the 1980 Wilderness Recommendation, this Plan retains approximately 27 miles of existing roads necessary to provide access to Kanab Point, S.B. Point, 150 Mile Canyon Trailhead, and the Tuckup Trailhead. As specified in the GMP, the Wilderness Recommendation, and *NPS Management Policies*, the proposed action calls for the conversion of 70 miles of additional



**Figure 8.2**  
*Primitive Roads Open to Trailheads and Overlooks*

roads to trails or restoration to a natural condition. This Plan establishes a ten-mile section of this road network as the “Kanab Plateau Trail” connecting Kanab Point with the 150 Mile Canyon Road.

This Plan also establishes the closure to mechanized access of the so-called “Toroweap Point Overlook” Road on the mesa above the Tuweep Ranger Station. This primitive road should not be confused the popular Toroweap overlook road at Tuweep. Although the 1980 Wilderness Recommendation provides for retaining a nonwilderness corridor to Toroweap Point, the existing 7.85-mile road is severely damaged in numerous locations and fades completely in the pinyon-juniper forest well before reaching any vista. This Plan establishes a nine-mile section of this road network as the “Brady Hollow Trail.”

### *Toroweap Valley*

The ten-mile primitive road to “The Cove” will be converted to a trail.

A two-mile section of a west-trending spur of the Vulcan’s Throne Road and a one-mile section of the Toroweap Land-fill and Access Road will be restored to a natural condition.

### *Other Areas*

*Sanup Plateau* The Fort Garrett road will be converted to a trail.

*The Hook* The two primitive roads north of New Water Springs in the Park will be restored to a natural condition.

*Cape Solitude* The Final Wilderness Recommendation calls for the closure of the Cape Solitude Road to mechanized access. The GMP provides for the establishment of a trail along the old road alignment from Desert View to Cape Solitude.

*Pasture Wash* Restore the “Huitzal Spur Road” to a natural condition.

## *8.4 Facilities*

Wilderness is undeveloped Federal land retaining its primeval character and influence, without permanent improvements (Wilderness Act 1964). Accordingly, authorizations of NPS administrative facilities located in wilderness will be limited to the types and minimum number essential to meet the minimum requirements for the administration of the Wilderness area. A decision to construct, maintain, or remove an administrative facility will be based primarily on whether such a facility is required to preserve wilderness character or values or essential to ensure public safety—not on considerations of administrative convenience, economy of effect, or convenience to the public. Maintenance or removal of historic structures will additionally comply with cultural resource protection policies (*NPS Management Policies*, 6:5).

The Kanabownits cabin and fire tower are classified as administrative sites excluded from wilderness (1980 Wilderness Recommendation). The NPS will conduct a record search and his-

torical documentation to determine their eligibility for the National Register of Historic Places. Upon completion of this process, a determination regarding course of action will be made.

### *Cabins*

Ranger stations, patrol cabins, associated storage or support structures, drift fences, and facilities supporting trail-stock operations may be placed in wilderness only if they are necessary to carry out wilderness management objectives and provisions of this Plan.

Currently there is one administrative cabin in wilderness. The Muav Saddle cabin, constructed in 1927, remains on the List of Classified Structures. It is a contributing element to the National Register of Historic Places nomination for Bass Camp and Trails Historic District. The District was determined eligible for listing by the Arizona SHPO in August 1997.

The construction or reconstruction of shelters for public use generally will not be allowed, since wilderness users are self-supporting. An existing shelter will be maintained only if the facility is necessary to achieve wilderness management objectives or cultural resource protection objectives. Currently, there is only one shelter in the wilderness, the Santa Maria shelter on the Hermit Trail. The shelter and associated rock out-houses have been determined eligible for listing on the National Register of Historic Places and will be protected as significant cultural resources.

### *Fire Towers, Cable Crossings, Radio Repeaters, Etc.*

Hydrologic, hydrometeorologic, seismicographic, and other research and monitoring devices may be installed and operated in wilderness only upon a finding that (1) the desired information is essential and cannot be obtained from a location outside wilderness, and (2) the proposed device meets the Minimum Requirement to accomplish the objective safely and successfully (see Appendix D, Minimum Requirement Decision Process). Devices located in wilderness will be removed when determined to be no longer essential. All research activities and the installation, servicing, and monitoring of research devices will be accomplished in compliance with NPS wilderness management policies and procedures contained in this Plan.

Facilities such as fire lookouts, radio antennas, and radio repeaters will be placed in wilderness only if they are the minimum required to carry out essential administrative functions and are specifically authorized by the regional director (*NPS Management Policies*, 6:5).

*The Signal Hill Fire Tower* lies within the proposed wilderness. The NPS will conduct a record search and historical documentation to determine its eligibility for National Register of Historic Places. Upon completion of this process, a determination regarding the appropriate action will be made.

*The Mt. Emma Repeater*, constructed in 1983, lies within the proposed wilderness of Grand Canyon National Park (Thomas, J.T. 1983). Originally envisioned as a temporary facility, the continued need for this facility will be evaluated under the requirements of *NPS Management Policies*. Upon completion of this process, a determination regarding the appropriate action will be made.

#### *Colorado River Cable Crossings*

Currently, two cable crossings are located within the proposed wilderness, one just above the Little Colorado River confluence and the other just above Diamond Creek. These facilities were constructed in 1982 to assist in the Glen Canyon Environmental Studies. The continued need for these facilities will be evaluated under the requirements of *NPS Management Policies*. Upon completion of this process, a determination regarding the appropriate action will be made.

#### *Helispots*

No permanent heliports, helipads, or airstrips are allowed in wilderness. Temporary landing facilities may be used to meet the minimum requirements of emergency situations. Site improvements determined to be essential for safety reasons during individual emergency situations may be authorized, but the site will be restored to a natural

condition after the emergency has ended. Natural openings may be used for authorized nonemergency aircraft landings, but no site markings or improvements of any kind will be installed to support nonemergency use (*NPS Management Policies*, 6:6).

#### *Campsites*

Although the development of facilities to serve users will generally be avoided, campsites may be designated when essential for resource protection or enhancement of opportunities for solitude. In keeping with the terms of this Plan, campsite facilities may include a site marker, a tent site, a food-storage device, and a toilet, but only if determined by the superintendent to be the minimum facilities necessary for the health and safety of wilderness users or for the protection of wilderness resources and values. Picnic tables will not be placed in wilderness (*NPS Management Policies*, 6:6).

#### *Toilets*

Toilets will be placed only in locations where their presence and use will resolve health and sanitation problems



or prevent serious damage and where reducing or dispersing visitor use has failed to alleviate the problems or is impractical. (*NPS Management Policies*, 6:6).

### *Signs*

Signs detract from the wilderness character of an area and make the imprint of management more noticeable. Only those signs necessary to protect wilderness resources or for public safety will be permitted. Where signs are used, they will be compatible with their surroundings and be the minimum size possible (*NPS Management Policies*, 6:6).

### *Bat Cave Tram Towers*

The 1980 Wilderness Recommendation called for the removal of the mining tram towers near River Mile 266. To restore wilderness values, the park service proposed in 1995 to remove the three towers and the surrounding debris located within Grand Canyon National Park (U.S. Department of Interior, National Park Service, 1995b. FONSI Transmittal Memo.). Due to public controversy, the Park chose not to implement the proposed action at that time (U.S. Department of Interior, National Park Service 1995b).

This issue will be reviewed by the Superintendent, and appropriate actions will be pursued.

## *8.5 Summary of Changes and Actions*

- Retain ten primitive roads (nonwilderness corridors) to trailheads or overlooks (Figure 8.1). Manage these areas as part of the Semi-Primitive Mechanized Opportunity Class spectrum
- Maintain primitive roads to minimal standards, allowing only improvements that reduce resource impacts while keeping the roads minimally open for high-clearance or four-wheel-drive vehicles
- Convert to trails or restore to a natural condition approximately 140 miles of primitive roads described in Figure 8.3.



**Figure 8.3**  
summary of  
Actions

<i>Primitive Road</i>	<i>Miles</i>	<i>Management Action/ Treatment</i>
<i>North Rim "Fire Roads"</i>	27.4	Designate as wilderness trails. Requirements specific to fire management will be addressed in the Fire Management Plan
<i>Basin W-1 Road</i>	9.2  1.4	Designate as wilderness trails. Requirements specific to fire management will be addressed in the Fire Management Plan. Relocate 1.4 miles of trail cross the Basin. Restore the Basin section of old W-1 to a natural condition.
<i>Kanab Plateau Roads (except those described in Figure 8.1)</i>	40 10	Restore to a natural condition. Establish sections of road network as Kanab Plateau Trail
<i>Toroweap Point Overlook Road</i>	9	Establish severely damaged section of road network as Brady Hollow Trail
<i>Toroweap Valley Cove Road Vulcan's Spur Tuweep Landfill and Access Road</i>	10 2 1	Designate as Cove Trail Restore to a natural condition Restore to a natural condition
<i>Cape Solitude</i>	9.6	Establish trail on old road alignment from Desert View
<i>Fort Garrett</i>	1	Convert to trail
<i>Two Primitive Roads North of New Water Springs on The Hook</i>	3.8	Restore to a natural condition
<i>Huitzal Spur</i>	2	Restore to a natural condition



## CHAPTER

### 9

#### safety and Emergency Operations

As stated in Chapter One, an objective of the Wilderness Management Plan is to provide a reasonable level of public safety, consistent with wilderness areas and in accordance with *NPS Management Policies*. The saving of human life will take precedence over all other management actions. The National Park Service and its concessioners, contractors, and cooperators will seek to provide a safe and healthful environment for visitors and employees. The Park Service will work cooperatively with other Federal, State, and local agencies, organizations, and individuals to carry out this responsibility. However, visitors assume a certain degree of risk and responsibility for their own safety when visiting areas that are managed and maintained as natural, cultural or recreational environments. (*NPS Management Policies*, 8:5).

Additionally, *Policies* emphasizes that visitors must accept wilderness largely on its own terms, and accept certain risks, including possible dangers that are inherent in the various elements and conditions that comprise a wilderness experience. In wilderness areas in particular, management efforts focus on educating visitors about conditions and possible risks (*NPS Management Policies*, 6:8; See this Plan's Chapter 10, Interpretation, Education and Information).

#### 9.1 Issues and Public Concerns

The extreme conditions (temperature, aridity, and elevation) of Grand Canyon's environment, the topography and remoteness, combined with the challenges inherent in wilderness travel sometimes result in unexpected events that may require the need for emergency services.

Trained NPS staff handle at least 480 rescues below the rim each year for injuries, hypothermia, dehydration, and heat-related illnesses. While the highest proportion of emergency services occur in the Cross-Canyon Corridor, many also occur in wilderness including the Colorado River. Emergency operations in these remote areas are often hazardous.

Heat-related emergencies are common during the summer months. During this time, the staff spends most of its time dealing with emergency responses at the expense of other responsibilities including resource protection and visitor education. A major concern is that many of the situations are often a result of ill-prepared, uninformed hikers, and the Park recognizes the need for an increased effort toward visitor education (See Chapter 10, Interpretation and Education).

The public revealed safety concerns about day use and hiker education in the Public Scoping Process held in 1995. Most respondents suggested that the Park needs to disseminate more information on potential risks of

traveling in the Canyon. Restrictions on hiking distances, time of day, and number of open trails were also suggested as ways to reduce NPS emergency responses. Another frequent suggestion was to charge victims for all emergency medical services rendered by the NPS and other providers. In recognition of the Canyon's wilderness values, several respondents stated that the NPS should not be responsible for each visitor's safety, and that part of the wilderness experience is the risk and challenge.

## 9.2 Grand Canyon National Park Emergency Operations

*NPS Management Policies* provides overall guidance to evaluate the urgency of emergency incidents and to allocate available resources. Operational procedures are directed through the Grand Canyon National Park Emergency Medical Service (EMS) Plan (U.S. Department of the Interior. National Park Service. 1995d) and the Grand Canyon National Park Search and Rescue (SAR) Plan (U.S. Department of the Interior. National Park Service 1993a). The EMS Plan requires specific levels of training for all emergency response personnel. This Plan also includes guidance for emergency services provided to visitors and medical evacuations. The SAR Plan governs all search and rescue operations.

During a SAR incident, consideration will be given to protecting the Park's natural and cultural resources. While hazard mitigation may be required,

under no circumstances will pure convenience dictate the destruction of any Park resources or allow the significant interference of visitor enjoyment (SAR Plan:6).

### safety

The SAR Plan stresses safety priorities of responders and protection of resource values. Safety of responders comes before the life of a victim; this philosophy will guide all SAR operations. The Incident Commander is responsible for the health and safety of all involved responders.

The Grand Canyon National Park Safety Policy (U.S. Department of the Interior. National Park Service 1996) sets direction for managing a safe work environment for all Park employees. The Park Safety Policy emphasizes prevention of accidents by proper training, maintenance of equipment, and conformance to safety process and procedures.

In addition to safety policies and operational plans, the Park has established Standard Operating Procedures (SOP) that deal specifically with emergency operations and hazardous work-related procedures. These SOPs are as follows:

- Emergency Communications for Backcountry Operations (1996a)
- Emergency Reporting Procedures (1996b)
- Emergency Medical Requirements for Backcountry Operations (1996c)

*Ability to see  
the cultural  
value of  
wilderness  
boils down,  
in the last  
analysis, to a  
question of  
intellectual  
humility.  
The shallow-  
minded modern  
who has lost  
his rootage in  
the land  
assumes that  
he has already  
discovered  
what is  
important....*

*Aldo Leopold  
A  
Sand County  
Almanac*

- Hazards from Intentional Movement of Objects During Trail Restoration (1996d).

### *Minimum Requirement*

*NPS Management Policies* (6:4) provides for the administrative use of motorized equipment or mechanical transport, including motorboats and aircraft, "in emergency situations involving human health or safety." For the purposes of this Plan, "emergency situations" include:

- responses to those in need of medical or physical assistance when threats to human health and safety are reasonably assumed (SAR Plan:3)
- responses to those who are determined to be unjustifiably overdue and threats to human health and safety are reasonably assumed (SAR Plan:8)
- any response to downed aircraft
- any response to an "unknown emergency" (e.g., mirror flash, radio distress signal) (SAR Plan:9)
- any reported disaster
- responses to wildfire which threatens life, property, cultural resources or natural resources (Fire Management Plan:76).

There are six wilderness trails on the North Rim available for emergency mechanized access. These are E-4 (Komo Point), E-5 (Francois Matthes Point), E-6 (Walhalla Glades, W-1C (Widforss), W1-D (Tiyo Point), and a portion of W-1 (the junction of W-4 with W-1 to the west end of the abandoned

landfill). Temporary mechanized access is allowed for wildfire operations as defined above. Administrative use, such as required for prescribed burning programs, will be addressed on a project-by-project basis through the Minimum Requirement Decision Process (See Appendix D).

### *Fire Management*

Fire management activities conducted in wilderness areas will conform to the basic purposes of wilderness. Actions taken to suppress wildfires will use the Minimum Requirement Decision Process, and will be conducted in such a way as to protect natural and cultural features, and to minimize the lasting impacts of suppression actions and the fires themselves (*NPS Management Policies*, 6:7).

### *Aircraft*

No permanent heliports, helipads, or airstrips will be allowed in wilderness. Temporary landing facilities may be used to meet the minimum requirements of emergency situations. Site improvements determined to be essential for safety reasons during individual emergency situations may be authorized, but the site will be restored to natural conditions after the emergency has ended (*NPS Management Policies*, 6:6).

The Grand Canyon National Park Internal Aviation Policy (U.S. Department of the Interior. National Park Service 1991b) directs use of helicopters for emergency response opera-

tions. NPS staff are required to evaluate methods of travel for response and evacuation if needed. This evaluation is done within the context of the Minimum Requirement Decision Process.

### ***9.3 Preventative Search and Rescue (PSAR)***

Grand Canyon environmental conditions often present unexperienced desert hikers with a greater challenge than expected. For example, in 1996 alone Grand Canyon staff performed over 480 rescues below the rim. Any reduction in the frequency of necessary medical assistance is dependent on providing users with adequate information regarding their planned activities. While personal safety is always the responsibility of the individual, the agency can reduce risk by providing relevant, pre-trip information, including accurate trail information, timely weather reports, maps, and appropriate advice for both day and overnight hikes.

Because of increasing injuries, illnesses, and even deaths due to heat-related factors, the Park initiated a task force to review this issue. Their recommendations resulted in a concerted visitor information effort in the spring of 1997 which consisted of additional information at trailheads, local restaurants, and local newspapers and radio stations. In addition, warning signs were installed on popular trails and "PSAR" rangers and volunteers provided personal contact with visitors.

### ***9.4 Summary of Changes and Actions***

- The Park will continue to stress the safety priorities of responders and the protection of resource values
- Fire-management activities conducted in wilderness areas will conform to the basic purposes of wilderness. Actions taken to suppress wildfires will use the minimum-requirement concept, and will be conducted to protect natural and cultural features and to minimize the lasting impacts of suppression actions and the fires themselves. The Park will develop minimum requirements for wilderness prescribed-burning programs in the revision of the Fire Management Plan
- No permanent heliports, helipads, or airstrips will be allowed in wilderness
- While personal safety is always the responsibility of the individual, the Park will attempt to reduce risk by providing relevant, pre-trip information, including accurate trail information, timely weather reports, maps, and appropriate advice for both day and overnight hikes.





## CHAPTER

## 10

### Interpretation, Education, and Information

#### 10.1 Public Concerns

**D**uring the Public Scoping Process for the Wilderness Management Plan conducted in 1995, people were asked to provide suggestions to solve the issues surrounding hiker education including damage to natural and cultural resources; the accumulation of human waste and litter; lost, ill-prepared hikers; and backcountry users who venture on to Tribal lands without permission.

The most prevalent suggestion was that wilderness users (defined as river runners, overnight and day hikers, and stock users) should attend some type of *mandatory orientation* prior to their Grand Canyon hike, the most popular being a video or slide presentation. Others felt that direct contact with knowledgeable staff was the most effective way to educate hikers.

Another popular suggestion involved having wilderness users pass a *written test* to acquire a “license” or certificate demonstrating proficiency in wilderness skills and ethics. Most agreed that educating inexperienced hikers was best accomplished when permits were picked up. Some thought that experienced hikers should be issued advance permits, and that inexperienced people should be required to pick up their permits.

Wilderness users want *more information*, especially when permits are issued. Several comments were made regarding the need for better maps and water-resource information. People also

commented on the *types of information* hikers should receive including: improved pre-hike guidance; low-impact and wilderness ethics for group leaders; Leave No Trace ethics for all users; information on expectations, for example, where aircraft will be heard or where encounters may occur with river runners or other groups; hiker etiquette; proper human waste disposal methods; and sensitivity to archaeological sites.

Some comments regarded use of *adjacent Tribal lands*. Respondents stated it was difficult to communicate with Tribal offices which resulted in an inability to obtain permits. It was stated that the NPS needs to develop a better permitting and access system for working with appropriate Tribal offices.

Respondents also suggested various *media* to provide information, including: improved educational literature; an automated video; brochures; written trail descriptions, displays at visitor centers or trailheads, and ranger talks. Many respondents suggested improved and/or increased *signing*, including: trailhead signs showing level of difficulty; signs with mileages, warnings and hiking times; signs that describe energy expenditure and water loss required to climb up vs. down; signs showing cost of rescues and medical aid; “scary warning signs” with death statistics and cost of rescues; signs in ten languages; signs with proper camping techniques; and signs at archaeological sites to educate hikers about sensitivity, and to demarcate boundaries.

A number of ideas were offered to provide better *permitting-office services*, including: effective phone and FAX services; on-line permitting services; training for inexperienced staff giving inaccurate or insufficient information; extended office hours; improved staffing numbers; a backcountry office in Flagstaff; information to permittees about size and location of other groups in a Use Area; information about archaeological site etiquette; staff and volunteers patrolling corridor trails to inform visitors and prevent emergencies; contact stations above and below the rim for dispersing information; organized educational sessions; guided hikes, and staff at the three main trail-heads.

## 10.2 Wilderness Education

### *Wilderness Education Objectives*

The objectives of the wilderness education program set forth in this Plan are to:

1) *Establish a coordinated interpretive program to provide hikers access to adequate and accurate information to (a) plan and execute a rewarding and safe expedition, whether hiking for a day or for an extended period, and (b) conduct themselves in a manner which is not damaging to wilderness resources and values.*

2) *Establish a coordinated, inter-agency wilderness educational program for staff (permanent, seasonal, and volunteer) to include (a)*

*wilderness management principles and philosophy; (b) Leave No Trace; (c) application of the Minimum Requirement Concept; (d) proficiency in the use of primitive tools; (e) minimum-impact trail maintenance techniques and fire suppression tactics; (f) wilderness safety practices and (g) appropriate medical response skills.*

NPS Management Policies (6:10) provides guidance on wilderness interpretation:

*The National Park Service will develop and maintain an effective public education program designed to promote and perpetuate public awareness of and appreciation for wilderness character, resources, and ethics without stimulating an unacceptable demand for use. Efforts will focus on the fostering of an understanding of the concept of wilderness that includes respect for the resource, willingness to exercise self-restraint in demanding access to it, and an ability to adhere to appropriate, minimum-impact techniques when using it.*

### *Establish a Coordinated Interpretive Program*

Grand Canyon National Park will adhere to this policy when planning or presenting information and interpretation regarding wilderness and backcountry resources.

*A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise.*

Aldo Leopold

Wilderness education must be balanced with the essential spirit of wilderness. Just as *management* of wilderness is a paradox, so to is providing information or a “safe” experience. *Wilderness* is an area devoid of “mans” influence, where nature is taken on its own terms. It is essential that prospective wilderness users have access to information with which they can plan safe and rewarding expeditions. It is equally important to the continuance of wilderness conditions that users have enough information to preserve the very essence they came to find. But, while it is essential to be adequately informed, it is important that users have a true wilderness experience, not one filled with signs, pamphlets, brochures, videos, rules, regulations, and contacts. Information and education must be accurate, up-to-date, readily available, easily understood, concise, and appropriate to maintain wilderness conditions. Not only must wilderness users adhere to minimum-impact techniques, but so must managers in their maintenance of wilderness.

At Grand Canyon National Park, 40 to 100 hikers a day crowd the Backcountry Office. An estimated 800,000 day hikers trek the Corridor trails. Over 50,000 backpackers sleep under the wild stars, and over 20,000 river runners yearly experience the Canyon’s wilderness from the soft sand of remote beaches. The NPS will never be able to reach each and every hiker who treads Grand Canyon’s wilderness. Since wilderness is inherently dangerous, it can never provide a completely safe experience. But the NPS will attempt, through various media, to make accu-

rate information available to Grand Canyon wilderness users.

### ***10.3 What Needs to be Communicated***

There are three main ideas to which wilderness users need exposure, and which, with hope, they will come to understand and incorporate into their wilderness practices: wilderness values, personal safety, and resource protection.

The need to teach *wilderness values* is clearly expressed in *NPS Management Policies* (6:10)

*The National Park Service will develop and maintain an effective public education program designed to promote and perpetuate public awareness of and appreciation for wilderness character, resources, and ethics. . . .*

### ***Wilderness Values***

Wilderness may mean something different to different people, but three central themes have consistency emerged: *experiential*, the direct value of the wilderness experience; the value of wilderness as a *scientific* resource and environment baseline; and the *symbolic* and *spiritual* values of wilderness to the nation and the world (Hendee 1990). While words may fail to convey all aspects of wilderness, an essential role of interpretation and education in wilderness is to promote and perpetuate the values expressed in the Wilderness Act.

## *Personal safety*

Due to the high number of wilderness users requiring medical assistance (in 1996, Grand Canyon performed over 480 rescues below the rim), it is essential that users have access to adequate information about their planned activities. *Personal safety* is always the responsibility of the individual, and much depends on pre-trip preparations. It is important that users have access to correct trail information, maps, and techniques both for day and overnight hikes. The environmental conditions of the Grand Canyon may present inexperienced desert hikers with a greater challenge than expected, and users need access to information specific to this location and environment.

Although the Wilderness Act briefly addresses public safety, *NPS Management Policies* (6:8) states,

*Park visitors must accept wilderness largely on its own terms, without modern facilities provided for their comfort or convenience. Users must also accept certain risks, including possible dangers arising from wildlife, weather conditions, physical features, and other natural phenomena, that are inherent in the various elements and conditions that comprise a wilderness experience and primitive methods of travel. The National Park Service will not eliminate or unreasonably control risks that are normally associated with wilderness, but it will strive to provide users with general information concerning possible risks, recom-*

*mended precautions, minimum-impact use ethics and applicable restrictions and regulations.*

Due to increasing injuries, illnesses, and even deaths at Grand Canyon due to heat-related factors, the Park initiated a task force to review this issue. Their recommendations resulted in a concerted visitor information effort in the spring of 1997 which consisted of addition information at trailheads, local restaurants, newspapers, and radio stations. In addition, warning signs were installed on popular trails and "PSAR" rangers and volunteers provided personal contact with visitors (See Chapter 9, Safety and Emergency Operations).

## *Resource Protection*

Resource protection is essential to the preservation of wilderness attributes and experience, and critical to the mission of a national park. The purpose of wilderness is to provide a certain experience for people based on an intact natural resource. Protection of the natural and cultural resources for current and future use is the very basis of wilderness. It is important that visitors to wilderness understand the purpose and parameters of wilderness so to leave it unimpaired as wilderness.

## *Leave No Trace*

The National Park Service has entered into an agreement with the National Outdoor Leadership School (NOLS) to teach Leave No Trace (LNT) practices



and ethics for national park users. See Figure 10.1.

#### *10.4 Communicating Information Successfully*

There are a number of options for effective interpretation and education; these include Personal Services (i.e., person-to-person) and Nonpersonal Services (i.e., written materials, video productions, signs, etc.). Other parameters taken into account when presenting information include Target Audience, Timing, and Location.

Since different people have differing learning styles, it is important to realize that there is no "best way" to provide information, thus information must be provided repeatedly in a variety of media. People who enjoy reading will read wilderness information brochures. People who enjoy watching television will benefit from video productions, etc. Thus, Grand Canyon will provide information to wilderness users in a variety of media hoping to reach the widest number of people.

##### *Personal Services*

Personal Services (people talking to people) have been shown to be the most effective means of communicating information. Due to the overwhelming number of people using Grand Canyon wilderness, it is impossible for park personnel to contact even a small percentage. The Public Scoping Process for this Plan revealed that numerous respondents felt that personal services needed improvement. With the arrival of

Fee Demonstration monies available during the years 1997-2000, a number of concerns expressed by the public will, with hope, be addressed. Included would be longer backcountry office hours, better phone and fax services, increased staffing, better trained staff, and increased visibility on trails or at trailheads. When the planned Mather Orientation Center comes online in the year 2000, potential day users of wilderness will have a better and more complete source of information than is currently provided.

##### *Nonpersonal Services*

Nonpersonal Services include brochures, videos, site bulletins, permit attachments, signs, and exhibits. As of 1997, brochures and a backcountry video are underway to increase wilderness user access to information. Although the Scoping Process identified that many respondents felt more signs are needed to insure wilderness values are preserved, *NPS Management Policies* (6:6) states,

*Signs detract from the wilderness character of an area and make the imprint of man and management more noticeable. Only those signs necessary to protect wilderness resources or for public safety, such as signs identifying trails and distances, will be permitted. Where signs are used, they should be compatible with their surroundings and be the minimum size possible.*

Grand Canyon has always maintained that signs are an intrusion in wilder-



ness, and that they will be used sparingly. Standards and criteria for use and placement of signs is outlined in Figure 3.2.

### *Target Audience, Timing, and Location*

It is essential that the right message get to the right people at the right place. For example, it would be less than effective to provide river-user information at the rims, or day-hiking information at Phantom Ranch. It is essential that users get as much information as far in advance of their trip as possible so that adequate preparations can be made. In many ways, day hikers who often begin a hike on the spur of the unprepared moment are often the most difficult group to reach. The timing and location of such information will be critical to these users.

Wilderness users are identified as river runners, overnight hikers, day hikers, and stock users. Since many of these users reach the Canyon from different directions and through permitting processes, information can be targeted appropriate to each group. Studies are needed to determine the most appropriate place and time to present information for the greatest effect. Plans are underway to make information more accessible to users.

#### *Locations*

- Backcountry Office
- Trailheads
- Wilderness Users' Homes
- Flagstaff Locations
- Grand Canyon Contact Stations
- Inner canyon locations

- Indian Garden
- Cottonwood
- Phantom Ranch
- Rest houses
- Lees Ferry
- Meadview
- Concession Operations
- River
- Hiker
- U.S. Forest Service Offices in Tusayan and Jacob Lake
- Bureau of Land Management Offices in St. George

#### *Timing*

- Pre-arrival (user home)
- Pre-arrival (in region)
- Pre-trip (in-park)
- As trip begins (trailheads, etc.)
- During trip

#### *Media*

- Brochures
- Video
- Permit attachments
- Site bulletins
- Signing
- Exhibits
- Personal contacts
- Internet
- Mailouts
- Audio tapes
- Regional information distributors
- Bulletin boards
- Park and other newspapers

#### *Audience*

- River runners
- Day hikers and stock users
- Overnight hikers and stock users
- Guides
- Concessioners
- Local and organized runners

### *Messages*

- Wilderness Ethics
  - Leave No Trace Principles
  - Hiking etiquette
  - Waste disposal
  - Multiple trailing
  - Resource issues
  - Expectations
  - Overflights
  - Encountering other groups
- Safety
  - Proper gear
  - Rescue statistics and information
  - Pre-trip planning
  - Fitness
  - Canyon environment
    - Desert limitations
    - Weather
    - Elevation
    - Proper mind set
    - Animals (wild and mules)
- Resource Protection
  - Regulations
  - Fishing and other rules
  - Closures
  - Archeology
  - Feeding wildlife

In 1993, the superintendent of Grand Canyon National Park requested the establishment of a field institute in order to extend available Park interpretive opportunities. The Grand Canyon Association established and administers the Field Institute in cooperation with the National Park Service. The Institute conducts a variety of educational field courses to accomplish this task (U.S. Department of the Interior, National Park Service 1993b).

### *10.5 Wilderness Education for staff*

This program includes permanent, seasonal, and volunteers and consists of training in 1) wilderness management principles and philosophy; 2) application of the minimum-tool/requirement concept; 3) proficiency in the use of primitive tools; 4) minimum impact trail maintenance techniques and fire suppression tactics; 5) wilderness safety practices; 6) appropriate medical response skills; and 7) Leave No Trace (LNT). LNT is the management and education program promoting responsible use of wildlands by encouraging an attitude of stewardship and responsibility (U.S. Department of Agriculture, et al. 1994).

Grand Canyon's interpretation of wilderness will strive toward a sound wilderness ethic, both in influencing the actions of wilderness users and in the presentation of information and interpretation.

### *10.6 Summary of Changes and Actions*

- Establish a coordinated public Interpretive Program which communicates wilderness values, personal safety, and resource protection
- Establish a wilderness education program for Park staff

## *Leave No Trace Principles\**

### *Plan Ahead and Prepare*

- Know the regulations and special concerns for the area you visit
- Visit the backcountry in small groups
- Avoid popular areas during times of high use
- Repackage food into reusable containers

### *Camp and Travel on Durable Surfaces*

#### *On The Trail*

- Stay on designated trails. Walk in single file in the middle of the path
- Do not shortcut switchbacks
- Hike on the most durable surfaces: rock, gravel, dry grass or snow
- Step to the inside of the trail when encountering pack stock

#### *At Camp*

- Choose an established, legal site that will not be damaged by your stay
- Restrict activities to the area where vegetation is absent or compacted
- Camp at least 200 feet (70 paces) from water sources

### *Pack It In; Pack It Out*

- Take everything out that you brought
- Protect wildlife and your food by storing securely
- Pick up all spilled foods and microtrash

### *Properly Dispose of What you Can't Pack Out*

- Deposit human waste in cathole six- to eight-inches deep, at least 200 feet from water, camp or trails. Cover and disguise cathole when finished
- Use toilet paper sparingly, and PACK IT OUT
- When washing, carry water 200 feet from sources. Strain dishwater, and carry out food scraps

### *Leave What You Find*

- Respect the resource. Leave plants, rocks, and artifacts where found
- Good campsites are found not made. Altering a site is not necessary
- Do not build structures, furniture or dig trenches
- Let nature's sounds prevail. Keep loud noise to a minimum

### *Minimize Use and Impacts of Fires\*\**

- Carry a lightweight stove for cooking

*Figure  
10.1  
Leave No  
Trace  
Principles*

\* Printed with cooperation of the National Outdoor Leadership School (NOLS), Inc.

\*\* Campfires are prohibited in the Grand Canyon wilderness. River trips are allowed driftwood campfires contained in regulation firepans.